

Notice of Allowability

Application No.

09/862,388

Examiner

Mark Ruthkosky

Applicant(s)

GONZALEZ ET AL.

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 12/23/2003.
 2. ☒ The allowed claim(s) is/are 5-12.
 3. ☒ The drawings filed on 21 May 2001 are accepted by the Examiner.
 4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).
- * Certified copies not received: _____
5. ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
 - (a) ☐ The translation of the foreign language provisional application has been received.
 6. ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application. **THIS THREE-MONTH PERIOD IS NOT EXTENDABLE**

7. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
8. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No. _____.
 - (b) ☐ including changes required by the proposed drawing correction filed _____, which has been approved by the Examiner.
 - (c) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No. _____.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the margin according to 37 CFR 1.121(d).

9. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|--|---|
| <input type="checkbox"/> Notice of References Cited (PTO-892) | <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | <input type="checkbox"/> Interview Summary (PTO-413), Paper No. _____ |
| <input type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No. _____ | <input type="checkbox"/> Examiner's Amendment/Comment |
| <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit of Biological Material | <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | <input type="checkbox"/> Other |

DETAILED ACTION

Claim Rejections - 35 USC § 102

The rejection of claims 1-4 and 13-15 under 35 U.S.C. 102(b) as being anticipated by Velasquez et al. (US 5,616,152) is moot, as the applicant has canceled the claims.

Allowable Subject Matter

Claims 5-12 are allowed.

The following is an examiner's statement of reasons for allowance:

Instant claims 5-7 are to a method of making lithium-intercalateable electrodes for lithium-ion batteries comprising the steps of applying a film-forming slurry to an electrically conductive grid on a carrier sheet wherein the slurry includes a plurality of lithium-intercalateable particles dispersed throughout a mixture of a polymeric binder and a solvent for the binder. Removing the solvent dries the film. A second carrier strip is applied to the first film and the first carrier sheet is removed. A second slurry is applied to the second face of the grid wherein the solvent in the second slurry dissolves at least some binder in the first film and promotes bonding of the first and second films to one another and to the grid. The prior art does not teach a method, as claimed, wherein the carrier strips are applied to the grid and later to the film followed by the partial dissolving of the first film to form a bond with the second film. As such, the claims are allowed.

The instant claims 8-12 are to a method of making lithium-intercalateable electrodes for lithium-ion batteries comprising the steps of forming a slurry including a plurality of lithium-

intercalateable particles dispersed throughout a mixture of a polymeric binder and a solvent for the binder; drying the film by removing the solvent; embedding the face of a conductive grid into the film and applying a film-forming slurry to the second side of the electrically conductive grid wherein the solvent in the slurry dissolves at least some binder in the first film and promotes bonding of the first and second films to one another and to the grid. The electrode is then dried and the plasticizer is removed from the mixture to leave a network of pores. The pores are backfilled with a lithium ion-conducting electrolyte. The prior art does not teach a method, as claimed, wherein the grid is embedded into a film followed by the partial dissolving of the first film by a solvent of the film-forming slurry to form a bond between the first film and the second film. As such, the claims are allowed.

The most pertinent art includes Velasquez et al. (US 5,616,152), as applied, which teaches a method of making lithium-intercalateable electrodes for batteries comprising the steps of applying a film-forming slurry to one or both sides of an electrically conductive grid wherein the slurry includes a plurality of lithium-intercalateable particles dispersed throughout a mixture of a polymeric binder and drying the slurry (see column 9, lines 25-40, examples 1-2 and claims 1-14.) Lithium intercalation electrodes are noted to include a slurry of an active material, a binder and a plasticizer, (in col. 7.) Electrolyte is shown to imbibe the porous electrodes upon assembly of the cell through the porous structure based on the removal of the plasticizer (see col. 5, line 50 to col. 6, line 15.) The electrode film may also be prepared from a film forming a laminate with the electrode active material film applied to both sides of the current collector (column 9, lines 25-40.) Heat and pressure may be applied to form the electrode. The current collector includes metal foils and screens (col. 3, lines 1-25) and the process of pressing the

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sheets onto the collector is inherently met by embedding the film onto the collector. The reference does not teach the methods as claimed and noted in the previous paragraphs and therefore the claims are allowed.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Examiner Correspondence

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-1193. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mark Ruthkosky whose telephone number is 703-305-0587. The examiner can normally be reached on FLEX schedule (generally, Monday-Thursday from 9:00-6:00.) If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached at 703-308-2383. The fax phone number is 703-872-9306.

Mark Ruthkosky
Primary Patent Examiner
Art Unit 1745

Mark Ruthkosky
1/14/04